Sectt. II-27—104,006—4-11-49.

Healt (195) Department.

SERIES.

MB.
G.O. NO. 1889

Dated 28-5-51

[Despatch Abstract.]

L.A. Question - DDT. Spraying operations in Malnad tracts in Karkal Taluk - Papers Recorded.

SECRETARIAT OF THE MADRAS LEGISLATURE.

(COUNCIL SECTION)

14/9/1950.

Starred.

SRI D. MANJAYYA HEGDE, M.L.C.

HEALTH DEPARTMENT.

.No.133

Will the Hon. the Minister for Health be pleased to state:

(a) whether it is a fact that the D.D.T. spraying operation has been extended to the Malanad tracts in Karkal taluk of South-Kanara district this year;

(b) if so, whether the Government have provided more money for further extension of D.D.T. spraying operation;

(c) if not, why not;

(d) whether it is a fact that the present D.D.T. spraying operation has been found less effective than that of last year; and

(e) whether it is a fact that the ~~present~~ D.D.T. spraying solution has been made less concentrated for the sake of economy?

pkr/14/9.

Health

Council E2

Please see the legislative question No. 133 above. This is starred. The DOH has been asked separately to suggest a suitable draft answer to the question. This may be circulated to H.M. (H) for perusal

18/9/50

29/9/50

29/9/50

30/9/50

30/9/50

H.M.(H)

SECRETARIAT OF THE MADRAS LEGISLATURE.

(COUNCIL SECTION)

14/9/1950.

Starred.

SRI D. MANJAYYA HEGGADE, M.L.C.

HEALTH DEPARTMENT.

*Q.NO.133

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(e) whether it is a fact that the present D.D.T. spraying solution has been made less concentrated for the sake of economy?

pkr/14/9.

Urgent C.No. 33397/50 S/ Health E2

Sub: Legislative Council question - question No. 133 - DDT operations in Karikal T... of South Kanara district

—x—

Memo. No 33397/50-1-E2-Health dt. 30.9.50

A copy of the legislative Coun... question cited is communicated to the DDT... He is requested to furnish by urgent ... information required for answering the ... question and any supplementary questi... which may be asked on the subject.

dt 29/9/50

for the DDK
(C.f. a copy of C.f.) av 29.9.50

30/9/50

SPECIAL

From

The Director of Public Health,
Madras.

To

The Secretary to Government,
Health Department, Madras.

L.Dis. No.72462-1-Mal.(2)/50 dated 6.x.1950.

Sir,

Sub:- Legislative Council Question - Question No.133 - DDT operations in Karkal Taluk of S.Kanara Dist.
Ref:- Govt.Memo No.33397/50-1-E2 Health d/30.9.50.

34842 I forward herewith the following draft answers to Legislative Council question No.133 on the above subject.-

DRAFT ANSWER.

a) DDT spraying has been extended to 24 villages in Karkal taluk during December 1949 to June 1950. It is also proposed to take up about 25 more villages in this taluk during the next spraying season (December 1950 to June 1951).

b) YES

c) DOES NOT ARISE

d) AND (e) - NO

In this connection attention of Government is invited to my letters D.No.141 Mal./50 dated 6.4.1950 and R.No.34746-Mal./50 dated 16.5.50 on the subject, copies of which are enclosed for ready reference. These references give details of the antimalaria measures which have proved very effective in the area.

for Director of Public Health, Madras.

Encl:
prs.6.x.

6/10/50

Copy of the letter D.No.141-Mal-50 dated 6th April, 1950 from Dr.R. Subramaniam, M.P.H.(Harvard) Director of Public Health, Madras to The Secretary to Government, Health Department, Fort.St.George, Madras.

Sub : MALARIA--South Kanara District--Puttur Taluk Antimalaria Scheme--DDT:Mixture--Ineffective-Report.
Ref : Govt.Memo.No.3814/50-1-E2-Health dated 23rd March, 1950

I inspected the Antimalaria Scheme in South Kanara District between the 21st and 25th March. I went to every range and made as many surprise inspections as possible of villages where spraying operations were actually going on. I saw the stores and records and making up of emulsions and equipment at every centre and in the field. I made enquiries of the Public of every village of their ~~mass~~ reactions and appreciation of the effects. I checked up spleen rates in a few villages.

(2) In addition to the inspections done by me, I deputed the Regional Malariologist, Coimbatore, and his staff to tour round ~~the~~ in different directions every day, visit different villages and conduct as much of test catches as possible in the area.

(3) The data furnished by the Regional Malariologist, an appraisal by the Senior Entomologist, Central Laboratory and the remarks of the Asst.Director of Public Health (Malaria) are appended herewith. From the observations made during my inspection and from the study of the data and the comments, I am convinced that the control scheme is being operated on proper lines and has achieved conspicuous success. At the end of my inspection, I told prominent citizens and Sri R.M.Sundaram, lately Director of Agriculture that malaria problem in that area has ceased to exist and that the locality is ready for agricultural and economic development. The dosage is correct and application properly done. There has been no error of commission or omission in the work.

(4) The objective of the scheme is to control malaria. It is not the objective to eradicate mosquitoes. Not all species are equally suspectible to DDT. The dose and technique adopted here is the right one for malaria control. Mosquito eradication, particularly of the hardier species like A.subpictus or Culex fatigans is not aimed at and naturally not achieved. That some mosquitoes do prevail in the area must have been the provocation for the Criticism offered. If mosquito eradication is to be aimed at, we may have to spend ten times the amount we are doing now. I do not consider it necessary.

A

Appraisal by the Senior Entomologist.

The material used for spraying work in connection with malaria control in South Kanara District is five percent DDT emulsion prepared with DDT (obtained from Medical Stores Depot), Aromex, the solvent and soap, the emulsifier. The usual procedure is to prepare the concentrate of 25 to 30% strength with the requisite quantity of materials at the field station and transport the required smaller quantities of this concentrate to the localities where spraying is to be done. The dilution with water to reduce the 25% ~~per~~ concentrate to 5% is made on the spot just before commencing the spraying. These are all done by responsible and trained persons like the Health Inspector who is in charge of the spraying squad. The actual spraying is done by means of stirrup pumps with standard nozzles that have been found to be most suitable for discharging the material at a steady rate under standard pressure. The rate of spraying is roughly 4000 sq.ft.per gallon. The spraying is done by men who have been given the necessary training before being put to work.

For the transmission season of the year 1949, from January to June, altogether 3 rounds of sprayings were done.

In order to ascertain the critical density of the larvae and adults of mosquitoes before starting the control measures and also to know the effectiveness of DDT spraying, a number of catching stations are selected both in sprayed and unsprayed villages. For purposes of collecting mosquitoes catching stations like human, mixed dwellings and cattle sheds are fixed up and for collecting larvae, hill streams, river-bed pools, ponds, pools, tanks rice fields and irrigation channels are also fixed up in the above mentioned sprayed and unsprayed areas.

In the areas under Puttur Malaria Control Scheme, although very nearly 15 different species of anopheles mosquitoes are to be found two of them namely Anopheles culcifacies and Anopheles fluviatilis are known as the particular species, responsible for the transmission of malaria in these areas. The entomological squad attached to the scheme maintain a constant watch over the mosquito density in general and with particular reference to the vector species referred to above. Searches for adult mosquitoes periodically are made by the field assistants in the sprayed and unsprayed area and records are maintained of the routine collections. Particulars relating to the presence of vectors, namely A.culicifacies and A.fluviatilis from routine weekly collections are furnished below:-

Beltangadi and Guruvankere:

A.culicifacies area: Of the two, the former is a sprayed area and the latter unsprayed. Three sprayings were completed before the onset of the monsoon rains in June. The man-hour collections at Beltangady for A.culicifacies was one on 8-4-49 and 6-5-49. Threafter, the collections were nil. The 3rd spray was on 9th June, 1949 and from the date till 31-12-49, the collection for A.culicifacies was nil. In the contrast village of Guruvankere, the catches of A.culicifacies was at a maximum of 13 before 19-5-49 and the species continued to be available throughout.

Sullia and Mosmet:

A.culicifacies area: The former sprayed and the latter unsprayed. The collection of A.culicifacies was 12 on 2-4-49 and 9-4-49. The 2nd spray was then given during that week. Subsequently the density of A.culicifacies never went above 3 till the next spray. The third spray was on 17-6-49. The collections were nil from them on. In the contrast villages of Mosmet, A.culicifacies were collected almost throughout all the weeks.

Sampaje:

A.fluviatilis area: The second and third sprays were on 7-3-49 and 19-5-49. The man-hour collections were 2 for a short time and subsequently it was nil. From the above, it will be seen that the prevalence of the vector species was kept as nil or at a very low level in the sprayed villages, whereas in the contrast villages the man-hour collections for A.culicifacies was even as high as 18. This low man-hour collections can safely be attributed to the residual effect of DDT on the mosquitoes.

Appearance of other anopheline species:

During the months of monsoon rains, May to September, most of the species caught were either A.subpictus or A.vagus which are ubiquitous breeders. After the monsoon rains had abated, A.hyrcanus began to appear supplemented by A.barbirostris. The larvae of A.aconitus, A.varuna, A.jeyporensis and A.jamesi were found breeding in irrigation pools and small streams. After the commencement of DDT spray the density of the above species went down considerably. They were however, available in small numbers.

The incidence of malaria has been considerably reduced as is evidenced by the reduction in the number of malaria cases in all the hospitals in the area. Usually the incidence of malaria is highest during months of May to September of each year. The incidence was much reduced during these months in the year 1949. The successive spleen rates recorded in the villages and parasite index also show that the incidence of malaria is much less than in previous years.

It should therefore be considered that the antimalaria work in the area is effective as far as malaria control is concerned. Complete eradication of the Anopheline fauna of the area is not the objective. The critical density of the malaria transmitting species are well under check by the spraying operations. As per the data collected by the Regional Malariologist, Coimbatore, during the last week of March, 1950, also, in Sullia, Puttur, Beltangadi and Karkal, it is found that not a single A.Culicifacies or A.fluviatilis has been caught in any of these places.

It may be possible that culex mosquitoes which are only nuisance mosquitoes and which breed in all kinds of collections of water are to be found in fair numbers; but it must be stated that the programme in Puttur taluk is only for antimalaria and not-antimosquito.

Remarks of the Asst.Director of Public Health
(Malaria and Mosquito-Borne Diseases) Madras.

An appraisal of the entomological and other work done in the Puttur Scheme, by the Senior Entomologist, is given above. The complaint of Mr.Shiva Rao is that "the DDT mixture now used is not found effective in keeping away mosquitoes and that it may be due to the fact that the mixture is used in a dilute form".

It is pointed out that on basic principles, the object of DDT spray in malaria control operations is not the keeping away or eradication of all kinds of mosquitoes like culicines or even Anophelines of the non-vector species. The object is to keep down the density of the vector Anophelines below the critical level needed for transmission. That this object has been more than achieved in this scheme is seen from the fact that during the recent surprise check made by the Regional Malariologist, Coimbatore and his staff, as per instructions of the Director of Public Health, not a single mosquito of the vector species (A.fluviatilis and A.Culicifacies) was caught in these collections made in the human dwellings in the sprayed areas in many different centres in the scheme area.

Factual data regarding the DDT preparation used are given below:-

DDT.is obtained from Government Medical Stores and is of the standard technically pure quality.

The emulsion is made under the personal supervision the Health Officer. The strength sprayed is 5% DDT.

Correct dosage is used viz., 56 mgms.DDT per square ft.of wall area ($\frac{1}{4}$th gallon of 5% emulsion to 1000 sq.ft).

The equipment used is the stirrup pump or knapsack sprayer, with correct sized spray nozzles.

The gangs are well trained and their work is supervised by the Field Assistant and the Health Inspector. The Health Officer also makes surprise checks. The technique of spraying is as per correct principles.

P.T.O.

The sprays are repeated every 8 weeks and every house in the controlled area receives three sprays during the malaria transmission.

The above points were personally checked by the Director of Public Health during his recent inspections (from 21st to 25th March, 1950) of the scheme. It may also be stated that spleen rates taken by the Director of Public Health and myself, at random showed marked decline since the commencement of spray operations. Hospital figures of the malaria morbidity have also markedly declined. On questioning by the Director of Public Health, the people generally expressed satisfaction at the relief obtained since the scheme started functioning.

True Copy - Forwarded

for Director of Public Health,
Madras

V.A.
7/4/50

Data furnished by the Regional Malariologist, Coimbatore:-;Adult Collections--Puthur Unit--South Kanara District.

Date.	Name of Unit.	Name of Villages.	Species caught					
			A.Culicifacies	A.annularis.	A.varuna	A.subpictus	A.vagus	A.subpictus or vagus.
		Human Dwellings						
22-3-50	Sullia Unit	Kanakamanjalu	-	-	-	1	1	-
		Jelsur	-	-	-	11	5	3
		Sampaji	-	-	-	2	-	-
		Sullia	-	-	-	-	1	-
		Guthigar	-	-	-	1	1	-
	Puthur Unit	Kenya	-	-	-	-	-	-
		Kothige	-	-	-	-	4	-
23-3-50	Belthangadi Unit	Kuruvayankarae (Contrast).	-	1	-	-	2	-
		Belthangadi	-	-	-	-	-	-
		Mundaji	-	-	-	-	-	-
24-3-50	Karkal Unit	Nellikal	-	-	-	-	-	-
		Kokradi (not sprayed)	-	-	-	2	-	-
		Total	-	1	1	17	14	3
		Cattlesheds						
22-3-50	Sullia Unit	Kanagamanjalu	1	-	-	1	9	5
		Jelsur	-	-	-	1	8	-
		Sampaji	-	-	-	-	-	-
		Sullia	-	-	-	-	-	-
		Guthigar	-	-	-	-	-	-
	Puthur Unit	Kenya	-	-	-	-	-	-
		Kothigi	-	-	-	-	-	-
	Karkal Unit	Kokradi	-	-	-	1	1	-
		Total	1	-	-	3	18	5

p.t.o

Note: The figures represent collections made in approximately one hour in each village, by three persons. Adult vector mosquitoes were conspicuously absent. Adult density also was uniformly low.

Larval Collections

22-3-1950

1. Sambaji Stream

1. A.barbirostris	3
2. A.culicifacies	1
3. A.varuna	2
4. A.fluviatilis	4
5. A.hyrcanus	1
	11

2. Sullia Stream:

1. A.culicifacies	13
2. A.jeyporiensis	4
3. A.barbirostris	4
4. A.subpictus	7
	28

3. Kangamanjalu Stream:

1. A.culicifacies	3
2. A.varuna	2
3. A.barbirostris	3
	8

4. Kanagamanjalu Paddy Fields:

1. A.annularis	4
2. A.culicifacies	3
3. A.pallidus	1
4. A.subpictus	6
	14

24-3-50

5. Kokaradi Stream:

1. A.varuna	2
2. A.fluviatilis	3
3. A.subpictus	1
4. A.vagus	2
5. A.aitkeni	1
6. A.barbirostris	1
	10

for Director of Public Health, Madras.

Sam 7-10-50

Public Health Dept.

From	To
Dr. R.Subramaniam, M.P.H.(Har) Director of Public Health, 141, Poonamallee High Road, Kilpauk, Madras, 10.	The Secretary to Govt., Health Department, F.S.G., Madras.9.

Sir, R.No. 34746 - Mal. 50 Dated May 16, 1950.

Sub: DDT - Formulation - Eradication of Mosquitoes.
Ref: Govt. Memo No. 11204/50-1-E(2)-Health dated 9th May, 1950.

In paragraphs (1) of the above memorandum, the following statements are made:

1. DDT-spraying done in Coorg (Mysore State) has reduced considerably the mosquito population;

2. It has shown a definite effect on all kinds of mosquitoes;

3. Planters and Villagers have given up mosquito nets;

4. They are of the opinion that there are practically no mosquitoes; and

5. Insect collectors and assistant-entomologists invariably get no catches of any kind of mosquitoes.

2. I would request Government to peruse the last paragraph of my letter D.No. 141-Mal/50 dated 6-4-50. The statement attributed to me in paragraph 3 of the above memorandum is not found in my letter nor is it altogether deducible from my observations. What I said was that our techniques are appropriate for malaria control purposes, that mosquito eradication was not aimed at and that mosquito eradication will cost more than malaria control.

3. The statements given in paragraph 1 of the memorandum do not in any way conflict with the statements made by me. The first statement simply says that mosquito population is reduced. It does not say that all kinds of mosquitoes are eradicated. That is exactly the position stated by me also.

4. The second statement says that DDT-spraying had shown a definite effect on all kinds of mosquitoes. This was not denied in my report. The effect is variable. The hardier species survive after a time and re-appear more quickly and in larger numbers than the vector species. No statement was made by me that DDT has no effect at all on any particular species of mosquito.

5. The third and the fourth statements are merely popular impressions. That kind of popular impression does prevail in all the villages in South Kanara where control operations have been carried out. No mosquito nets are used by anybody. No nuisance is felt by the people.

6. It is surprising that statement like the fifth one referred to above should have been made. I am convinced that such a result is very unlikely to have happened.

7. I am unable to comment further on the conditions reported in Coorg, unless I have the records and reports of the work carried on there with fuller particulars. I would suggest that whenever information relating to another Province or another organization is

to be scrutinised and compared for our purposes; official records and reports on which the information is based may also be obtained and furnished to me.

8. The formulation and particulars of spraying given in paragraph (2) of the memorandum are not new to this department. This formulation was first devised by Dr. I.M. Puri, Deputy Director of Malaria Institute of India. It was tried in this Province as well as in Delhi and other places. It was given up as unsuitable. It is physically impossible to grind DDT in a mortar by hand to the required fine size. DDT-particles coalesce in large lumps, block the sprayers and get deposited in irregular lumps on the surfaces. At page 11 of the Report of the Malaria Institute of India for the year, 1947, the Director states:

> "Some samples of technically pure DDT cannot be made into a suspension by the (above method) as crystals instead of being ground into smaller size particles become coalescents and the whole preparation becomes lumpy. A simple method of preparing a suspension with such samples of DDT has not yet been worked out."

The technically pure DDT referred to in the above quotation is the DDT supplied by the Medical Stores of Bombay and Madras.

9. The Assistant Director of Public Health (Malaria) visited Coorg in May, 1949, along with the two members of the Public Health Board, Dr. S. Subrahmanian and Sri G.A. Pais. He found that in sprayed houses big lumps of DDT particles were sticking to the walls here and there and that the application was most irregular and uniform. I have obtained the latest information from the Malaria Institute of India and I had discussed this question personally with Dr. Puri during my visit to Delhi last month. I am not aware of any improvement they have effected to this formulation. Manufacture of wettable powder which will give a uniform suspension is now a trade secret and is achieved only by certain firms. If the authorities in Coorg continue to apply antiquated, unpracticable and wasteful formulation, I submit that the Madras Government need not be anxious for their organization to imitate such methods.

10. The formulation used in this Province, particularly in South Kanara scheme, has been already reported in my last communication. That is the formulation now accepted as the best and most convenient by the Malaria Institute of India. It is the formulation used in all the other schemes. It is the formulation used by World Health Organization authorities in their scheme areas. It is the formulation used in Bombay Province and in Delhi Province. If all these are to be abandoned and if this practice in Coorg is to be adopted, there must be a more convincing reason for it. At present I do not see any.

11. Lastly, with reference to eradication versus malaria control, the following extracts from page 261 of the Chronicle of the WHO, November, 1949, I may be relayant:

> " The eradication, i.e., the absolute elimination of the vector-species of malaria, which is in process of realization in Sardinia and Cyprus, has given rise to the hope that this radical form of malaria control might come into

general use. The committee discussed this question in detail and examined for the health authorities, the respective merits of the two methods: one on the one hand, the control of anophelines by insecticides with a residual action, and on the other, the eradication, within a given area of malaria-carrying species of mosquito, a method essentially involving larval control. While fully realising the considerable advantages obtained by the eradication of the vector species, the committee drew the attention of the authorities concerned to the fact that the success of measures with this aim depends on a number of factors; the presence or absence of natural barriers, e.g., mountains, which might impede the re-introduction of anophelines; local topography, which may be favourable or otherwise for the formation of breeding places; and the economic stage of the country. This last point is important since eradication is costly; it may entail clearing and drainage and must be undertaken over the whole of a territory, which necessitates detailed organization and qualified personnel. Furthermore, preliminary investigation of the habits of the vector-species is necessary, in order that the campaign may be rationally conducted. In addition, when an area is freed from certain species of mosquito, a vigilant watch must be kept to prevent their reintroduction.

Malaria control by the spraying of insecticides has the advantage of stopping the transmission of malaria in a simple and direct way. It may be limited to houses and shelters in malarious areas and does not entail a preliminary study of the bionomics of the parasites. Spraying with insecticides has the secondary effect of destroying other harmful insects. Finally, from the administrative view point, control by means of insecticides may be decentralised to a large extent although it would appear desirable for it to be organised on a country-wide scale. This method gives rapid results, and in particular makes it possible to prevent an epidemic or to check its spread."

12. We have schemes for filaria control different from malaria control. In the former DDT-adult spray is generally not included; the reason being the less potent action on the vector - culex fatigans.

13. My statement that the effects of DDT-spraying are not uniformly felt on all varieties of mosquitoes is based not only on literature relating to the observations in other areas but also on observations made in our own control schemes and also personal observations made by me during inspections. It is such a well accepted fact that literature is not needed to prove it now. Anyway, since the Government desire literatur to be cited, I may mention the the following:-

p.t.o.

(a) Page 12 of the Annual Report of the Malaria Institute of India for 1947:

"The analysis of the experiments carried out so far, shows that the dosage of 25 mgms. of DDT per square foot does not appreciably reduce the prevalence of A.subpictus except for two weeks ordinarily.

A.culicifacies however appears to be affected by this small dosage for comparatively longer period."

(b) In an article by Dr. I.M. Puri and Rajendra Pal in the Indian Journal of Malariology, March, 1947 - page 143, it is stated:

"Culex fatigans appeared to be very resistant to the effect of DDT. This is in conformity with the results obtained by other workers."

(c) In the same Journal at page 166, it is stated as follows:

"A.minimus was more sensitive to DDT residue than other anopheline; the effect on culicines was of shorter duration than on anopheline species.

The protection afforded against A.minimus was for a longer duration than against other local anophelines and culicines."

(d) In page 1216-17 of Volume 2 of the book "Malariology" by Boyd, 1949 Edition, the following statements are found:

Culex fatigans has proved more resistant but drastic reduction in its numbers has been realised.

"There appears to be a considerable variation in the sensitiveness of different species to contact with DDT deposits."

(e) In page 232 of the Malaria Control Supplement to the Bulletin of WHO 1948, it is stated:

"In campaigns aiming at the eradication of vector species adequate residual spray may by itself prove sufficient in the case of highly anthropophilic and indoor resisting species; but with respect to others, it is frequently necessary to supplement such spraying with anti-larval measures."

(f) Lastly, I extract the following from the Bulletin of the WHO, Volume 1 No.2, 1948: (p. 287)

"Obviously, if DDT is employed for controlling malaria, the most convincing results will finally be those expressed in terms of malaria and not of entomology. Reductions in the anopheline density of the area, in the man-biting rate, or in the sporozoite-rate will certainly be very useful observations,

but the best evidence will always be supplied by showing the influence of a DDT campaign on the reduction of human malaria. . .

It is however too early to forecast what will happen in the future even in such regions. It is not suggested that among the mosquitoes that survive exposure to DDT, there might be some individuals genetically more resistant, which eventually might give rise to a DDT-resistant population, for no such anxiety has been voiced concerning anophelines. But it is hoped that, by repeating the sprayings over many years, the vector-species will be mostly affected and will gradually be replaced by non-vector species, thereby fulfilling as it were the aim of a 'species sanitation' based upon the more intimate contact with man of the vector-species."

Yours faithfully,

T/S

Director of Public Health, Madras.

NRR/16-5.

SECRETARIAT OF THE MADRAS LEGISLATURE (COUNCIL SEC)

14-9-1950

Sri D. MANJAYYA HEGGADE, M.L.C.

STARRED

.Q.NO.133

Will the Hon'ble the Minister for Health be pleased to state:

(a) whether it is a fact that the D.D.T. spraying operation has been extended to the Malanad tracts in Karkal taluk of South Kanara district this year;

(b) if so, whether the Government have provided more money for further extension of D.D.T. spraying operation;

(c) if not, why not;

(d) whether it is a fact that the present D.D.T. spraying operation has been found less effective than that of last year; and

(e) whether it is a fact that the D.D.T. spraying solution has been made less concentrated for the sake of economy?

HEALTH DEPARTMENT

DRAFT ANSWER

(a) D.D.T. spraying has been extended to 24 villages in Karkal taluk of South Kanara Dt. during December 1949 to June 1950. It is also proposed to take up about 25 more villages in the Taluk during the next spraying season (i.e.) December 1950 to June 1951.

(b) and (c) The answer is in the affirmative

(d) and (e) The answer is in the negative.

(Council section) s Legislature (with 5 copies)

Copy to Public (Ele) Dept. s/c.

G.O. 33397/50-2. Ex Health

Answered by Hon. Edn. on 24/1/51

P.C. to Hon. Edn. 24.1.51

'A'

Extract from the Proceedings of the Madras Legislative Council dated 24-1-1951

D.D.T. spraying operation in Malnad tracts in Karkal taluk.

132. Q.-Sri D. Manjaya Hegde: Will the Hon. the Minister for Health be pleasked to state--

(a) whether it is a fact that the D.D.T. spraying operation has been extended to the Malnad tracts in Karkal taluk of South Kanara district this year;

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(e) whether it is a fact that the D.D.T. spraying solution has been made less concentrated for the sake of economy?

The Hon.Sri K.MADHAVA MENON (on behalf of the Hon. the Minister for Health):--

(a) D.D.T. spraying has been extended to 24 villages in Karkal taluk of South Kanara district during December 1949 to June 1950. It is also proposed to take up about 25 more villages in the taluk during the next spraying season, (i.e.) December 1950 to June 1951.

(b) & (c) The answer is in the affirmative.

(d) & (e) The answer is in the negative."

Madras Legis. II-3—1,006—16-12-49.

SECRETARIAT OF THE MADRAS LEGISLATURE,

Fort St. George, dated the 27-9-1950.

ASSISTANT SECRETARY
29 SEP 1950
HEALTH DEPARTMENT

33397

QUESTION No. 133 for the meeting of the Legislative Council ~~to be held on the~~ commencing from 9-10-1950.

Two copies of this question are forwarded to the Health Department.

The question has been admitted.

27/9
28/9

28/9

To

The Health Department

W.Q. 6 5-10 / 5-0 - 14 N.H.
28-9-50

Health
E2

Please see the Legislative Council question at ref. It is a starred one. The SOMA Magpe requested to submit necessary particulars to answer the question. Draft memo. below is for approval

28/9/50
29.9.50

4 9
30/9

[Issued as Memo. No 33397/50-1-E2 Health dt 30/9/50]

P.T.O.

P5cf
P7cf

(Issued as Memo No.33397/50-1-E2 Health dated 30-9-50).
From the D.P.H., L.Dis.No.72462-1-Mal(2)/50 dt.6-10-50.

Please see the Memo to the D.P.H. at p.5 cf and his reply thereto at p.7 c.f. The question is a starred one.

Clause (a) of the question - Information ~~has been sought on the point~~ regarding whether D.D.T. spraying operation has been extended to the Malanad tracts in Karkal Taluk of South Kanara District this year. In his draft reply to the question, the D.P.H. has stated that D.D.T. spraying has been extended to 24 villages in Karkal Tk., during December 1949 to June 1950 and that it is proposed to take up about 25 more villages in this taluk during the next spraying season (i.e.) December 1950 to June 1951. He has not specifically stated whether the whole or some of the 24 villages in question lie in the Malanad tracts referred to. It has been since ascertained from the D.P.H's office on the phone that some of the 24 villages in question lie in the Malanad tracts referred to. The answer to the Legislative Council question may be on the lines of the draft reply furnished by the D.P.H. The information at 'A' above may be useful for any supplementary question.

P7cf

A

Clauses (b) and (c) of the question The answer may be on the lines of the draft reply furnished by the D.P.H. Necessary additional provision of funds ~~of~~ (about Rs.15,000) for extension of the Malaria operations in Karkal Taluk, S.Kanara Dt. during 1950-51, has been sanctioned.

P7cf

* Extra sanction on account of Staff Rs 11,300/-
Contingent expenditure Rs 3,500/-
14,800/-
or Rs 15000 Annual
Vide fn at pp 17-19cf (A)

Clauses (d) and (e) of the question The answer may be on the lines of the draft reply furnished by the D.P.H.

The references from the D.P.H. at p.3 c.f. of (C) and pp.23-27 c.f. of (C) may be helpful for answering any supplementary questions which may be asked

† Same as fn 7-19cf

G.V.D

The draft answer is submitted for approval.

The Case may be Circulated to HM (H)

Dd
12/10/50

AV
12.10.50

H 10
13/10/50

S
HM (H)

HM may also see the letter at page
159-(C)

H 13/10/50

HM (H)

14/10/50

Submitted. The question was answered by H.M. (E+L) [for H.M (H)] on 24-1-51. This may L.O. till Printed Proceedings of the Legislative Council are received to see whether any further action is to be taken in the matter.

Dd
27.1.51

H 29/1/51

'A' on P21 cf

18/1/51

SECRETARY
14 OCT 1950
HEALTH DEPARTMENT

L.O. till 1/3/51.

Please see the extract from the proceedings of the legislative council at p 234
No action is called for. The papers may be 'recorded'

AV
14.5.57

H
15/5/57

G.O. 1889 H, dated 28-5-5

Sub: H.A Qn- D.D.T. Spraying Operation in Kalnad Kattoor Karkala tq - Papers Recorded